

Green Waste Management After Closure of Puente Hills Landfill



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Green Waste Generation in LA County

- Greenwaste is 10-12% of total waste stream
- Greenwaste is over 15% of residential waste
- In 2009, 479,355 tons of green waste was counted as diversion in LA County using landfill ADC Programs

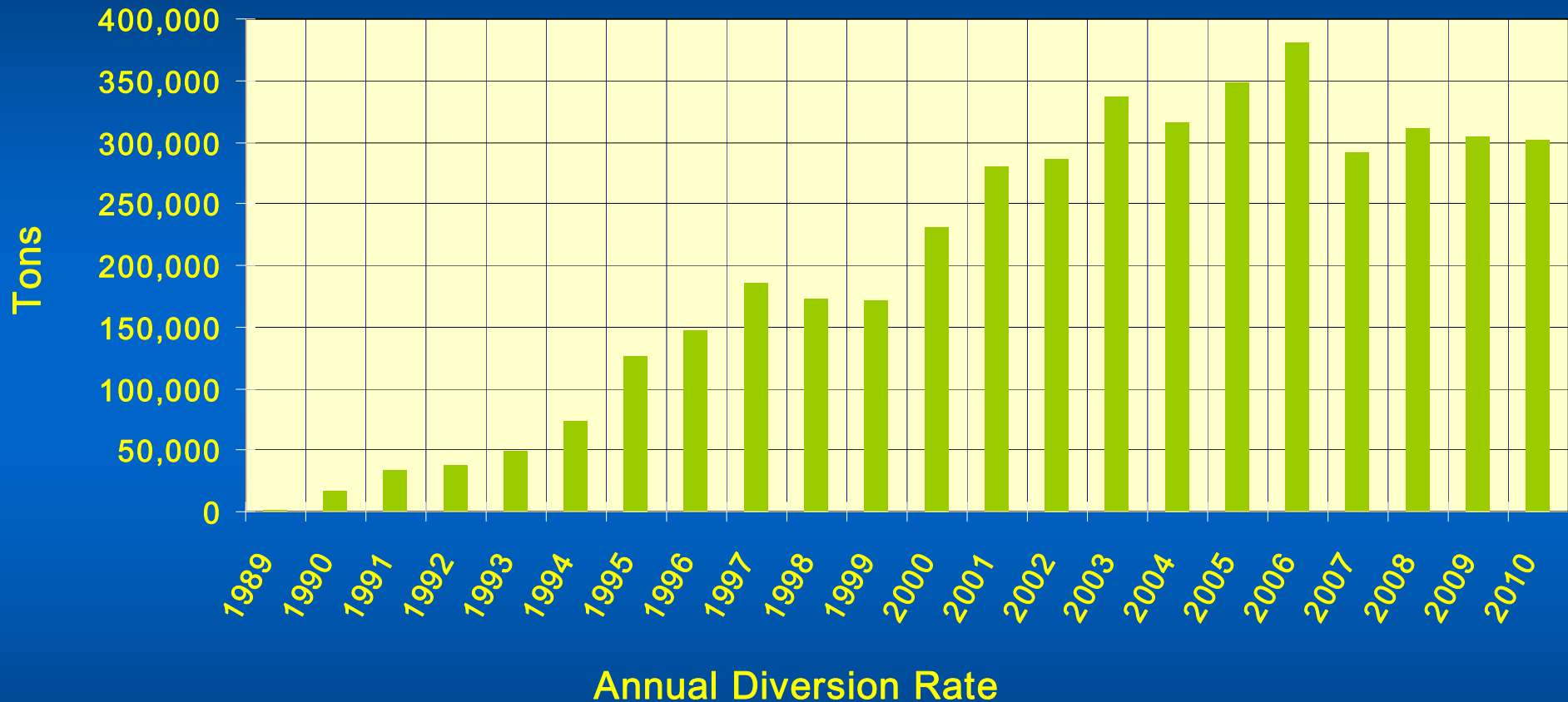


History of Green Waste ADC Program

- Up until 1988 LACSD used soil exclusively for daily cover
- In 1988, a demonstration study conducted by the Districts at Scholl Canyon LF showed shredded green waste could meet the performance criteria for daily cover
- When AB 939 passed in 1989, there were only a handful of green waste collection pilot programs in the County
- By 2005, 77 of 88 cities in LA County had green waste collection programs and a majority of these cities used Puente Hills ADC program for some portion of their material
- Green waste ADC Program has been instrumental for development of curbside collection of green materials at a reasonable cost!



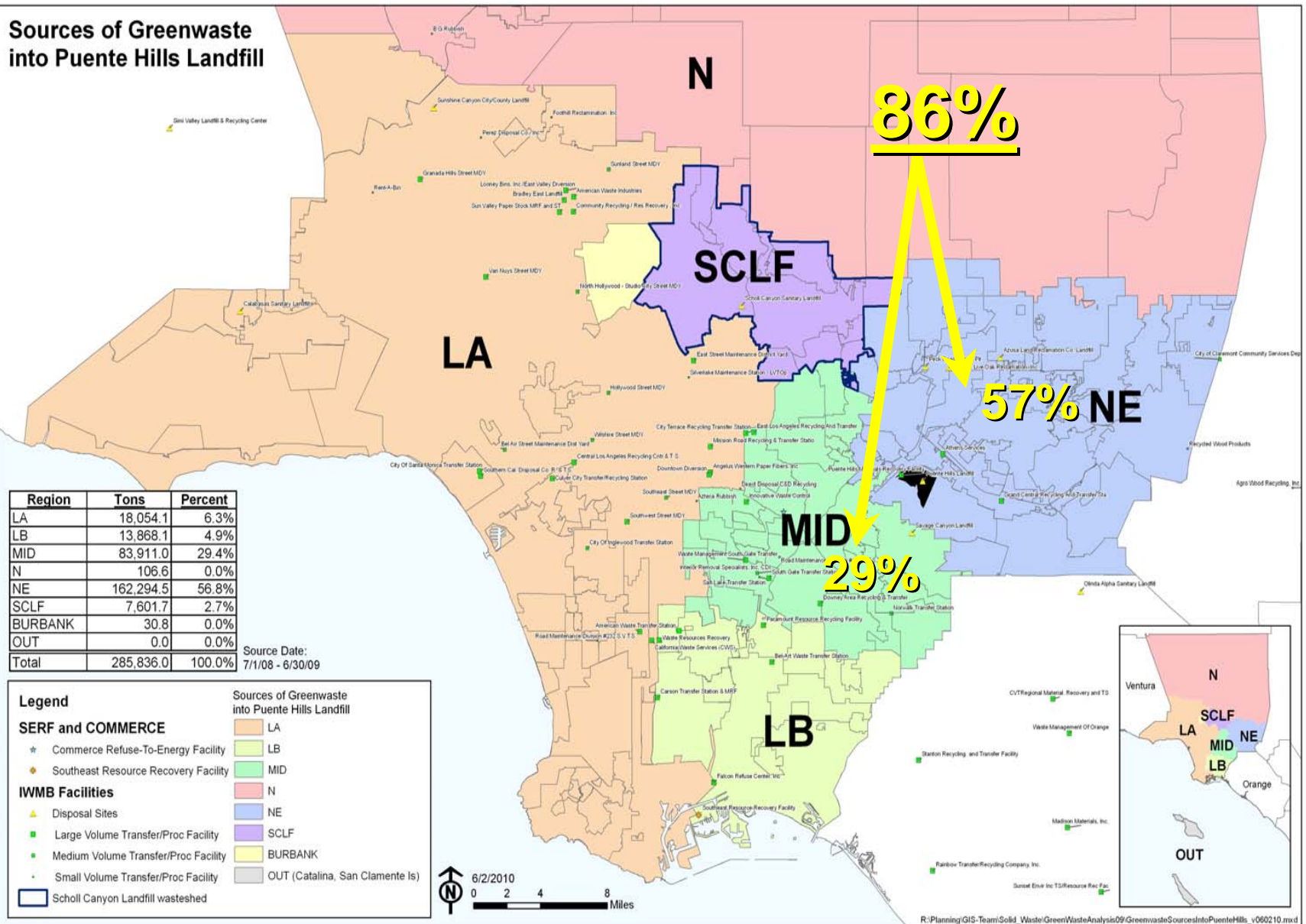
Green Waste Diversion at Puente Hills Landfill Over the Years



Total Beneficially Used in Program at Puente Hills
Over 4.4 million tons!

Who uses Puente Hills?

Sources of Greenwaste into Puente Hills Landfill



Evaluation of Geography and Origin of Puente Hills Green Waste

- **> 80% comes from within 10 miles of PHLF**
- **Main Sources: 6 Major Haulers, plus DART**
- **25 Jurisdictions > 85% in 2009**

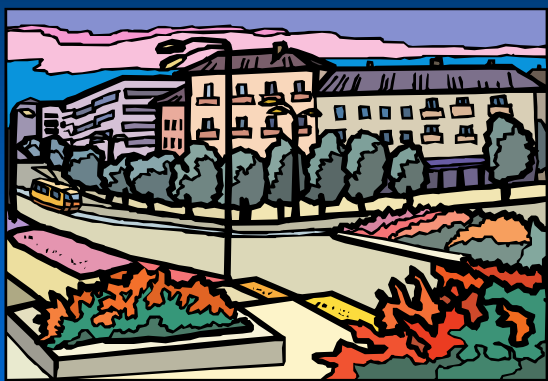
Jurisdictions % Contribution of Green Waste

JURISDICTION	2009 TOTALS (TONS)		SERVICE PROVIDER
HIGH TO LOW GW	GW	GW as % OF TOTAL	
LOS ANGELES COUNTY (UNINCORPORATED)	55,601	18.5%	Various Providers
WHITTIER	18,779	6.2%	City of Whittier, Consolidated (Republic)
ARCADIA	17,748	5.9%	Waste Management
WEST COVINA	17,083	5.7%	Athens Services
DOWNEY	15,042	5.0%	Cal Met
POMONA	14,589	4.8%	City of Pomona
			Phoenix Waste & Recycling Services & Valley Vista Services Inc.
EL MONTE	9,828	3.3%	
GLENDORA	9,577	3.2%	Athens Services
DIAMOND BAR	8,088	2.7%	Waste Management, Valley Vista Services
AZUSA	7,973	2.6%	Athens Services
COVINA	7,794	2.6%	Athens Services
CERRITOS	7,609	2.5%	Cal Met
BALDWIN PARK	7,392	2.5%	Waste Management
ALHAMBRA	6,607	2.2%	Consolidated (Republic)
LA VERNE	6,523	2.2%	Waste Management
MONTEREY PARK	6,237	2.1%	Athens Services
WALNUT	6,206	2.1%	Valley Vista Services
TEMPLE CITY	6,153	2.0%	Athens Services
SAN DIMAS	5,907	2.0%	Waste Management
LA PUENTE	5,901	2.0%	Valley Vista Services
SAN GABRIEL	5,819	1.9%	Athens Services
PALOS VERDES ESTATES	5,775	1.9%	Athens Services
MONROVIA	3,567	1.2%	Athens Services
			Consolidated (Republic) & Jackson Disposal (Waste Management)
NORWALK	1,910	0.6%	
LA MIRADA	1,047	0.3%	EDCO Disposal (Burrtec)
TOTALS	258,755	86.0%	
TOTAL GW TONS FROM ALL	303,800		

Top Customers of Green Waste at PHLF

Top Customer	Tonnage	Percent by Weight
Athens Services	70,650	23%
Waste Management	55,200	18%
DART	29,800	10%
Valley Vista Services	25,800	8%
Republic Services	24,300	8%
Burrtec	20,800	7%
Universal Waste	17,300	6%
Subtotal	243,850	80%
Total	303,800	100%

Green Waste Typical Flow Diagram

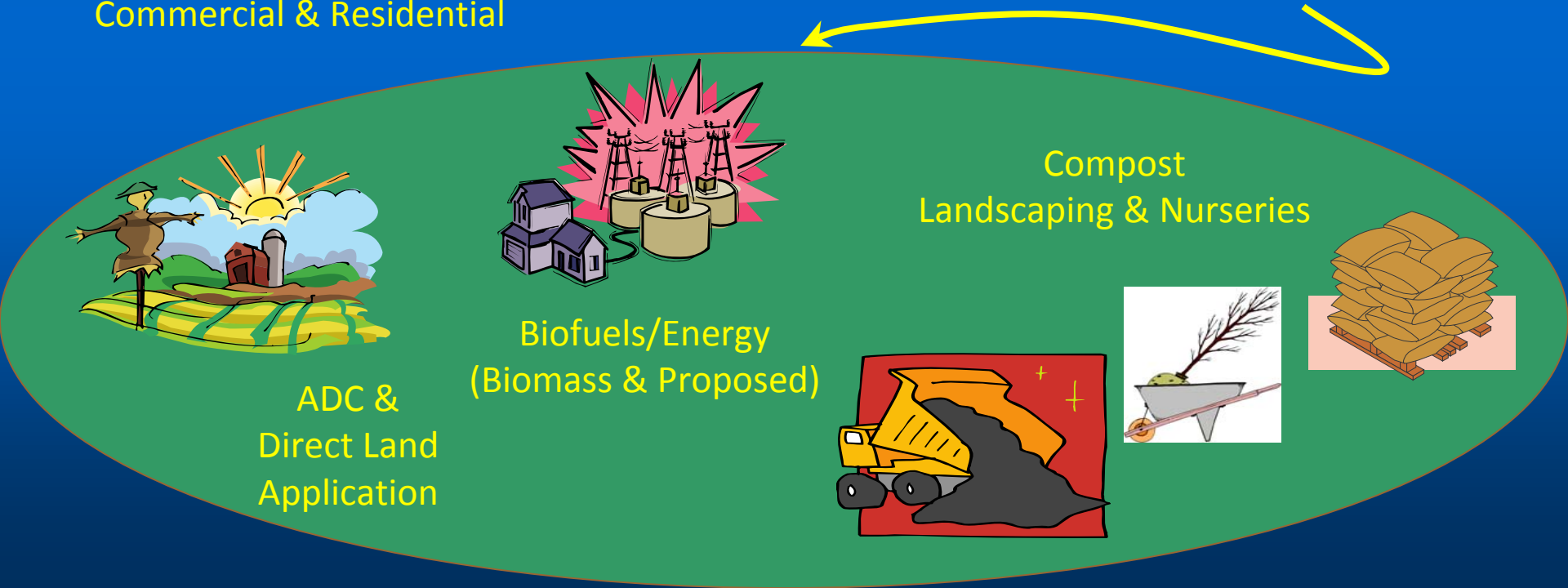


Sources of Material
Commercial & Residential

Transportation of Processed
& Unprocessed Green Waste



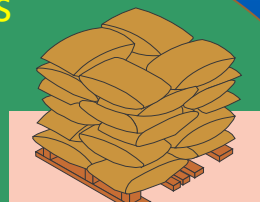
MRF's, Transfer Stations
& Processing Sites
(Clean, Chip & Grind)



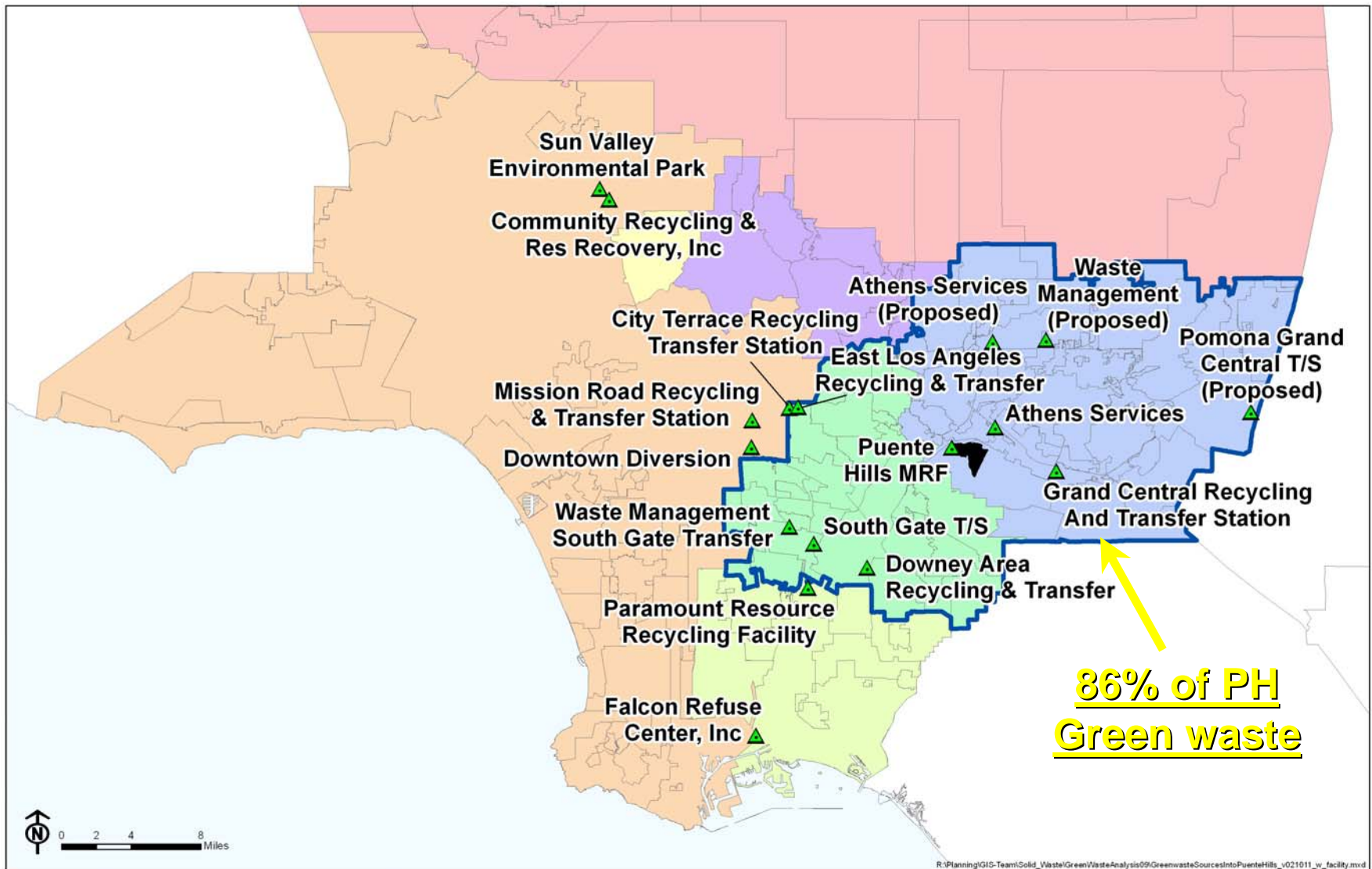
Compost
Landscaping & Nurseries

Biofuels/Energy
(Biomass & Proposed)

ADC &
Direct Land
Application



Green Waste Handling Capacity



MRF and Transfer Station Capacity

Facility	City	Capacity (tpd)	Current Incoming Tonnage (tpd)
LACSD DART	Downey	5,000	570
LACSD PHLF MRF	Whittier	4,400	380
Grand Central	Industry	5,000	950
Athens Services	Bassett	5,000	2,290
Sun Valley Recycling Park Transfer (4,000 tpd) and MRF (1,000 tpd, recyclables only)	Los Angeles	5,000	-
Sun Valley Recycling Park Green and Wood Waste	Los Angeles	2,500	1,090
Paramount Resource Recycling	Paramount	2,400	445
Waste Management	South Gate	2,000	405
Mission Road	Los Angeles	1,785	840
Community Recycling	Los Angeles	1,700	Unknown
Republic	Long Beach	1,500	1,280
Downtown Diversion	Los Angeles	1,500	495
LACSD South Gate Transfer Station	South Gate	1,000	450
East LA Recycling	City Terrace	700	555
City Terrace Recycling	City Terrace	700	295
Total		40,185	10,045
<i>Athens Services (Proposed)</i>	<i>Irwindale</i>	<i>6,000</i>	<i>N/A</i>
<i>Pomona Valley Transfer Station (Grand Central; Proposed)</i>	<i>Pomona</i>	<i>1,500</i>	<i>N/A</i>
<i>Waste Management (Proposed)</i>	<i>Azusa</i>	<i>3,800</i>	<i>N/A</i>
Total Incl. Proposed Facilities		51,485	

“Current Incoming Tonnage” data from 2009 as reported to LACDPW

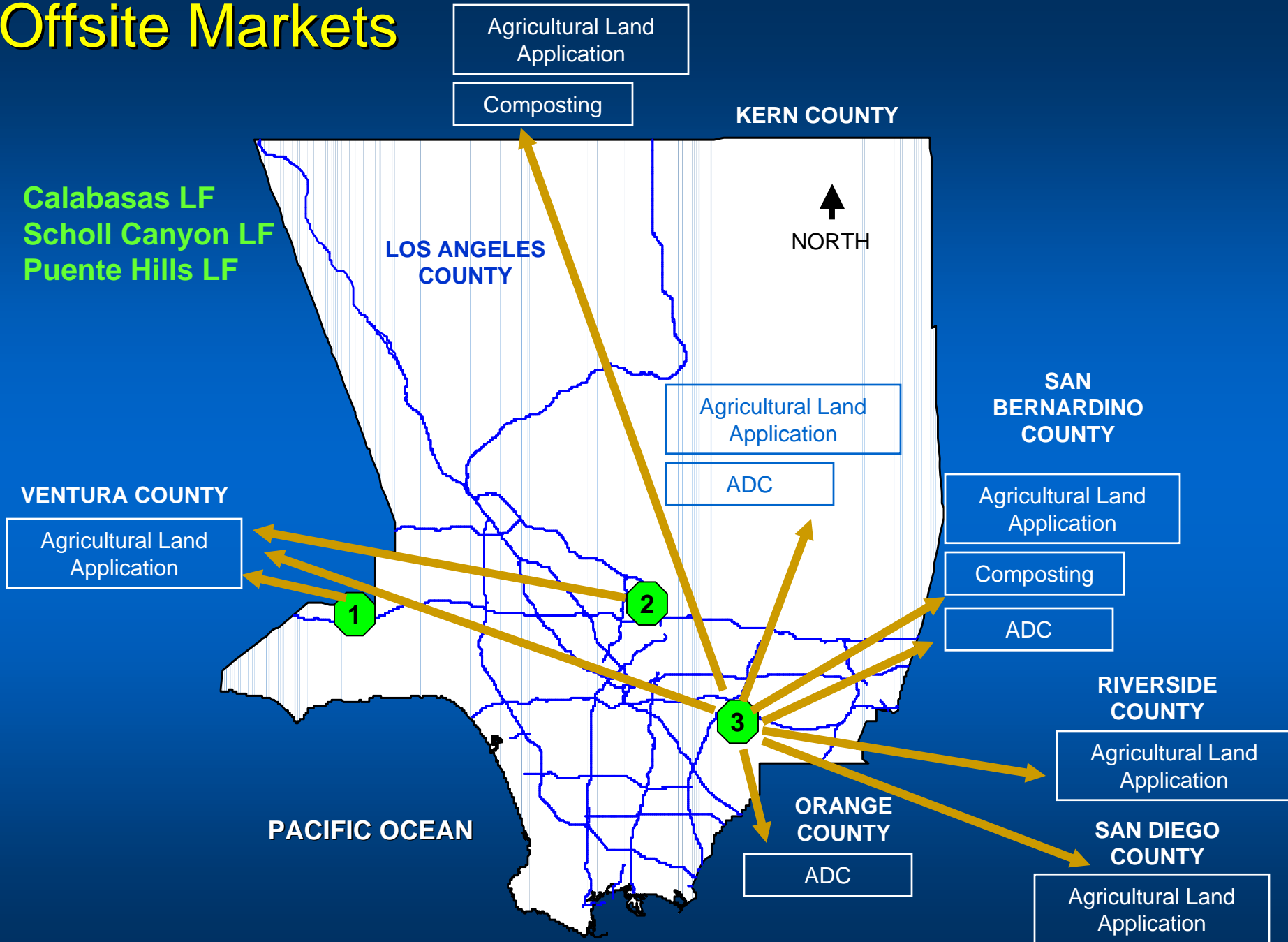
Outlook for Top Customers of Green Waste

Potential Future Destinations

- **ADC**
- **Composting**
- **Agricultural Land Application**
- **Erosion Control**
- **Proposed CT projects**

Offsite Markets

1. Calabasas LF
2. Scholl Canyon LF
3. Puente Hills LF



Markets for Green Materials

Alternative Daily Cover (ADC)



Markets for Green Materials

Agricultural Application



Markets for Green Materials

Composting



Westlake Farms Composting Facility

PURCHASED PROPERTY

Kettleman City, CA
Population 1,499

5.3 Miles

COMPOSTING
SITE

ACCESS
ROAD

UTICA AVENUE

0 1 mile 2 mile



Permitted Capacity:

-500,000 TPY Biosolids

- 400,000 TPY Green
Waste and Ag Waste

Inland Empire Regional Composting Facility (IERCF)



Permitted Capacity:

- 150,000 TPY Biosolids
- 60,000 TPY Green Waste and bulking agents

Markets for Green Materials

Landscape, Nursery Use & Mulching



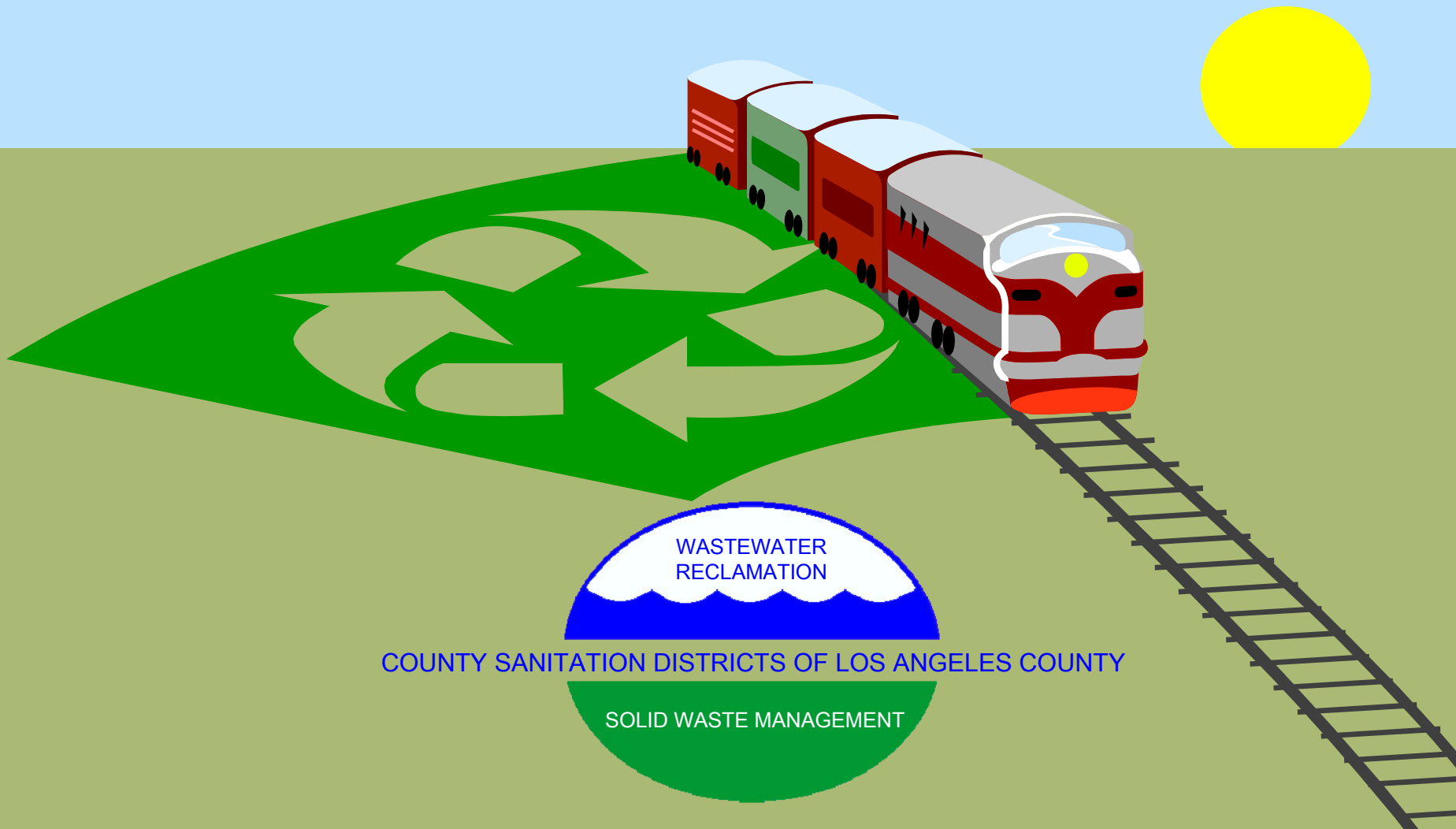
Current Pricing for Green Waste

- **PHLF = \$22.95 per ton**
- **DART (CSD's Downey MRF) = \$38.95 per ton**
- **Private MRF's = \$38 to \$50 + per ton**
Based on Current Gate Rates
- **Private Landfills = \$37 to \$60+ per ton**
Based on Current Gate Rates; Contracted Haulers of ADC into Orange County landfills pay a discounted rate of \$22.00 per ton

Conclusions

- Puente Hills manages 1,000 tpd greenwaste avg.
- County Transfer Facilities and MRFs
 - > 30,000 tons of Surplus Permitted Capacity
- Existing Markets:
 - Composting Permitted Capacity > 3,500 tpd
 - Land Application > 1,000 tpd
- Costs will Increase based on end use
- Proposals for CT projects to manage GW
- LACSD is reaching out to cities and County who rely on PHLF to determine their green waste recycling needs after closure

Clean, Green & Innovative Diversion & Disposal Programs



WASTEWATER
RECLAMATION

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

SOLID WASTE MANAGEMENT